THE WEATHER OF THE MONTH.

By Mr. WM. B. STOCKMAN, Chief, Division of Meteorological Records.

PRESSURE.

The distribution of mean atmospheric pressure is graphically shown on Chart VIII and the average values and departures from normal are shown in Tables I and VI.

The mean barometric pressure was highest over the Ohio Valley and Tennessee, Middle Atlantic States, southern New England, and the northern portion of the South Atlantic States, with the crest over the Appalachian Mountains. The minimum mean pressure occurred over interior California and the southern Plateau region, with the lowest mean, 29.84 inches, at Yuma, Ariz.

The mean pressure was above the normal throughout the country, except in portions of south-central Washington, central Oregon, and north-central California.

The greatest departures amounted to somewhat less than +.10 inch, and occurred over portions of the slope and Plateau regions, and the lower Mississippi Valley.

The mean pressure increased over that of August, 1904, in all districts, except the Florida Peninsula, extreme southern Louisiana, southeastern Texas, and along the Pacific coast.

TEMPERATURE OF THE AIR.

The distribution of maximum, minimum, and average surface temperatures is graphically shown by the lines on Chart V.

The mean temperature was below the normal in New England, lower Lake region, upper Lake region generally, northern and central South Dakota, North Dakota, along the immediate coast of Oregon and Washington, in southeastern California, Arizona, and southwestern New Mexico, with departures ranging from —2° to —3° in western Arizona, on the Washington coast, in the northern portion of the upper Lake region, eastern lower Lake region, and central and northern New England. Over the central and southern coasts of California, northern Plateau, eastern portion of the north Pacific region, southeastern portion of the middle slope and eastern portion of the southern slope regions, and the western and central portions of the Southern States, the departures ranged from + 2.0° to + 4.2°, with the greatest departures over eastern Oregon, southwestern Idaho, and east-central Mississippi.

By geographical districts the temperature was normal in the Middle Atlantic States; below normal in New England, Lake region, North Dakota, and the southern Plateau region; and above normal in all other districts. The maximum departures ranged from + 2.1° to + 3.2° and occurred in the middle and south Pacific and northern Plateau regions, and the Gulf States.

Maximum temperatures of 100°, or higher, occurred in portions of Indian Territory, Oklahoma, Texas, South Dakota, north-central Nebraska, southwestern Idaho, and western Arizona, and generally in California; and of 110°, or higher, in southeastern California and southwestern Arizona.

Freezing temperatures occurred in New England, Middle Atlantic States, northeastern Ohio, generally in Michigan, Wisconsin, Minnesota, South Dakota, North Dakota, and generally in the Plateau and northern and middle slope regions.

The mean temperature for the month was higher than the mean for any preceding September by 1° at San Luis Obispo, Cal., and Kalispell, Mont.; and 3° at Lewiston, Idaho, and Taylor, Tex.; and lower by 1° at Santo Domingo, S. D., and Puerto Principe, Cuba; 2° at Houghton, Mich., and Syracuse, N. Y. There were a number of stations where the mean for the month equaled the highest on record; also the lowest, the latter especially in the West Indies.

The maximum for the month exceeded that of any previous September by 1° at Helena, Mont., Lander, Wyo., and Pensacola, Fla.; 2° at Tacoma, Wash.; 3° at Huron, S. Dak., and Valentine, Nebr.; 4° at San Luis Obispo, Cal., and 7° at San Francisco, Cal.; and the minimum was lower by 1° at Albany and Oswego, N. Y., Northfield, Vt., and Portland, Me.; 2° at Rapid City, S. Dak., Richmond, Va., and Washington, D. C.; 4° at Binghamton, N. Y., Block Island, R. I., and Cape May, N. J.; and 5° at Eastport, Me.

The average temperatures for the several geographic districts and the departures from the normal values are shown in the following table:

Average temperatures and departures from normal.

Districts.	Number of stations.	Average temperatures for the current month.	Departures for the current month.	Accumulated departures since January 1.	Average departures since January 1.
		°	°	°	°
New England	8	59.1	— 1.6	—17.5	— 1.9
Middle Atlantic	12	66.7	0.0	—16.7	— 1.9
South Atlantic	10	74.3	+ 1.0	—10.8	— 1.2
Florida Peninsula*	8	80.1	+ 0.6	+ 1.3	+ 0.1
East Gulf	9	78.5	+ 3.2	— 4.3	— 0.5
West Gulf	7	78.8	+ 2.7	+ 4.7	+ 0.5
Ohio Valley and Tennessee	11	70.1	+ 1.8	—14.5	— 1.6
Lower Lake	8	62.6	— 0.5	—21.3	— 2.4
Upper Lake	10	58.0	— 1.2	—23.1	— 2.6
North Dakota*	8	55.2	— 1.6	—22.2	— 2.5
Upper Mississippi Valley	11	65.8	+ 0.8	—21.5	— 2.4
Missouri Valley	11	66.1	+ 0.9	— 8.7	— 1.0
Northern Slope	7	59.6	+ 1.5	+ 4.0	+ 0.4
Middle Slope	6	69.1	+ 1.4	+ 4.9	+ 0.5
Southern Slope*	6	73.0	+ 0.8	+10.4	+ 1.2
Southern Plateau*	13	68.6	— 0.9	+ 3.1	+ 0.3
Middle Plateau*	8	61.6	+ 1.1	+ 3.7	+ 0.4
Northern Plateau*	12	61.8	+ 3.2	+18.4	+ 2.0
North Pacific	7	58.3	+ 1.2	0.0	0.0
Middle Pacific	5	65.0	+ 2.1	+ 3.6	+ 0.4
South Pacific	4	71.1	+ 2.8	+ 8.3	+ 0.9

*Regular Weather Bureau and selected voluntary stations.

In Canada.—Prof. R. F. Stupart says:

The mean temperature of September was higher than the average over British Columbia and the western portions of the Northwest Territories and lower than the average in all other parts of the Dominion. The largest positive departure reported was 4° at Banff, Alberta, and the largest negative 5° in the Ottawa Valley and western Quebec. In Manitoba and the eastern portions of Assiniboia and Saskatchewan the negative departure was from 1° to 2°.

PRECIPITATION.

The distribution of total monthly precipitation is shown on Chart III.

By geographic districts, the precipitation was normal in North Dakota; above normal in New England, west Gulf States, lower Lake region, upper Mississippi Valley, the middle and southern slopes, middle Plateau, and middle and south Pacific regions; and below normal in the remaining districts.

During the last few days of the month very heavy, steady rains fell over the greater portion of New Mexico, causing the most extensive and destructive floods in that Territory on record. During the several days of the continuance of the rainstorm from three to seven inches of rainfall occurred at a number of stations. The greatest damage occurred over the eastern slope of the mountains and along the valleys and lowlands of the northern portion, with nearly as destructive results over the eastern slope of the mountains in the southwestern portion.

Phenomenally heavy rains occurred from the 22d to the 26th in the central and northern portions of California, causing destructive floods and doing much damage. Occasional heavy rains fell during this period in the southern portion of the State.

Average precipitation and departure from the normal.

Districts.	Number of stations.	Average.		Departure.	
		Current month.	Percentage of normal.	Current month.	Accumulated since Jan. 1.
		Inches.		*Inches.*	*Inches.*
New England	8	3.71	119	+0.6	— 0.7
Middle Atlantic	12	3.21	87	—0.5	— 6.9
South Atlantic	10	3.07	59	—2.1	—10.7
Florida Peninsula*	8	5.20	67	—2.6	— 3.3
East Gulf	9	1.70	45	—2.1	—13.1
West Gulf	7	4.40	110	+0.4	— 4.9
Ohio Valley and Tennessee	11	1.57	53	—1.4	— 7.9
Lower Lake	8	3.24	110	+0.3	+ 2.2
Upper Lake	10	3.32	97	—0.1	— 1.7
North Dakota*	8	1.28	100	0.0	+ 0.5
Upper Mississippi Valley	11	3.96	121	+0.7	+ 0.3
Missouri Valley	11	2.04	84	—0.4	+ 1.1
Northern Slope	7	0.65	68	—0.3	— 0.1
Middle Slope	6	2.12	123	+0.4	+ 3.5
Southern Slope*	6	3.44	136	+0.9	+ 1.1
Southern Plateau*	13	1.64	174	+0.7	— 0.2
Middle Plateau*	8	0.84	131	+0.2	+ 2.6
Northern Plateau*	12	0.39	39	—0.6	— 0.6
North Pacific	7	0.58	20	—2.3	— 2.3
Middle Pacific	5	3.66	482	+2.9	+ 7.5
South Pacific	4	1.40	1,400	+1.3	+ 0.8

*Regular Weather Bureau and selected voluntary stations.

In Canada.—Professor Stupart says:

The most pronounced feature of the precipitation was the excessive rainfall over the Province of Quebec, particularly in the eastern townships, where the amounts in some localities aggregated over seven inches. The fall was also in excess of the average in the Maritime Provinces and in northern and eastern Ontario. Nearly all stations in the western portions of Ontario report a deficiency which was most marked near Lake Huron and on the high lands of the more central counties.

HAIL.

The following are the dates on which hail fell in the respective States:

Arizona, 1, 4, 9–12. California, 11, 12, 21, 23–26. Colorado, 1–3, 11, 12, 17, 18, 22, 27. Delaware, 15, 27. Florida, 3, 15, 16. Georgia, 8. Illinois, 13, 18, 20, 25–27. Indiana, 11, 18. Iowa, 1, 6, 11, 17–20, 24–27. Kansas, 11, 13, 19, 26, 27. Kentucky, 8, 12. Maine, 9, 30. Michigan, 18, 25. Missouri, 1, 11, 19, 26. Nebraska, 1, 13, 23, 26–28. Nevada, 22, 23, 25, 27, 29. New Hampshire, 21. New Jersey, 15. New Mexico, 2, 12, 20, 26, 27. New York, 12. North Dakota, 24. Ohio, 2, 8, 18. Oregon, 24. Pennsylvania, 8, 9. South Dakota, 25, 28. Tennessee, 8. Texas, 4, 12, 13, 19, 21. Utah, 12, 15, 20, 22, 23, 27, 29. Vermont, 3, 30. Virginia, 27. West Virginia, 8, 9. Wisconsin, 1, 6, 18, 25, 28. Wyoming, 1, 2, 22, 26, 27.

SLEET.

The following are the dates on which sleet occurred in the respective States:

Colorado, 24. Michigan, 20. Nevada, 27.

CLEAR SKY AND CLOUDINESS.

The distribution of clear sky is graphically shown on Chart IV, and the numerical values of average daylight cloudiness, both for individual stations and by geographic districts, appear in Table I.

Average cloudiness and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England	5.2	+ 0.2	Missouri Valley	4.5	+ 0.5
Middle Atlantic	4.8	0.0	Northern Slope	3.4	— 0.6
South Atlantic	4.2	— 0.6	Middle Slope	4.3	+ 1.1
Florida Peninsula	4.8	— 0.7	Southern Slope	5.4	+ 1.8
East Gulf	4.1	— 0.3	Southern Plateau	3.6	+ 1.3
West Gulf	4.8	+ 0.5	Middle Plateau	3.8	+ 1.3
Ohio Valley and Tennessee	4.6	+ 0.2	Northern Plateau	2.9	— 1.2
Lower Lake	5.2	+ 0.4	North Pacific	4.6	— 0.3
Upper Lake	6.1	+ 1.0	Middle Pacific	4.0	+ 1.2
North Dakota	5.2	+ 0.9	South Pacific	2.7	+ 0.2
Upper Mississippi Valley	5.0	+ 0.8			

The cloudiness was normal in the Middle Atlantic States; below normal in the Florida Peninsula, South Atlantic and east Gulf States, and the northern slope, northern Plateau, and north Pacific regions; and above in the remaining geographic districts. The increased cloudiness was somewhat marked in the upper Lake, middle and southern slope, southern and middle Plateau, and middle Pacific regions, as was the deficiency in the northern Plateau region.

The average cloudiness for the various districts, with departures from the normal, are shown in the preceding table.

HUMIDITY.

The relative humidity was normal in the middle Pacific region, South Atlantic States, and New England; below normal in the Florida Peninsula, east Gulf States, and the northern Plateau and north Pacific districts, and above normal in the remaining districts. The deficiency was quite marked in the northern Plateau, as was the excess in the upper Mississippi Valley, southern slope, and southern and middle Plateau regions.

The averages by districts appear in the subjoined table:

Average relative humidity and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
	%			%	
New England	81	0	Missouri Valley	70	+ 4
Middle Atlantic	79	+ 2	Northern Slope	59	+ 4
South Atlantic	80	0	Middle Slope	64	+ 6
Florida Peninsula	80	— 2	Southern Slope	72	+ 9
East Gulf	75	— 1	Southern Plateau	80	+ 9
West Gulf	77	+ 3	Middle Plateau	47	+10
Ohio Valley and Tennessee	73	+ 1	Northern Plateau	44	— 7
Lower Lake	78	+ 5	North Pacific	77	— 4
Upper Lake	81	+ 4	Middle Pacific	63	0
North Dakota	71	+ 5	South Pacific	67	+ 1
Upper Mississippi Valley	79	+ 7			

WIND.

The maximum wind velocity at each Weather Bureau station for a period of five minutes is given in Table I, which also gives the altitude of Weather Bureau anemometers above ground.

Following are the velocities of 50 miles and over per hour registered during the month:

Maximum wind velocities.

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
Block Island, R. I.	15	84	nw.	New York, N. Y.	15	68	nw.
Buffalo, N. Y.	30	50	w.	Philadelphia, Pa.	15	58	nw.
Cape May, N. J.	15	53	nw.	Point Reyes Light, Cal.	22	58	s.
Charleston, S. C.	14	50	n.	Do	23	72	s.
Grand Rapids, Mich.	18	58	w.	Do	26	59	nw.
Hatteras, N. C.	14	51	sw.	Do	27	60	nw.
Macon, N. C.	21	54	se.	Sault Ste. Marie, Mich.	30	56	nw.
Nantucket, R. I.	15	58	s.	Syracuse, N. Y.	30	52	w.

ATMOSPHERIC ELECTRICITY.

Numerical statistics relative to auroras and thunderstorms are given in Table IV, which shows the number of stations from which meteorological reports were received, and the number of such stations reporting thunderstorms (T) and auroras (A) in each State and on each day of the month, respectively.

Thunderstorms.—Reports of 3900 thunderstorms were received during the current month as against 3155 in 1903 and 7291 during the preceding month.

The dates on which the number of reports of thunderstorms for the whole country was most numerous were: 2d, 246; 18th, 232; 1st, 227; 24th, 191; 12th, 190.

Reports were most numerous from: Iowa, 274; Illinois, 273; Missouri, 227; Wisconsin, 209.

Auroras.—The evenings on which bright moonlight must have interfered with observations of faint auroras are assumed to be the four preceding and following the dates of full moon, viz, September 20 to 28, inclusive.

In Canada: Thunderstorms were reported from Halifax, 21; Grand Manan, 30; Yarmouth, 12; Quebec, 18, 20, 30; Montreal, 2, 3, 18, 20; Kingston, 3, 14; Toronto, 2, 20, 25, 29; White River, 30; Port Stanley, 2, 8, 20, 24, 26, 29; Saugeen, 2, 18, 24; Parry Sound, 2, 18; Winnipeg, 28; Qu'Appelle, 28; Swift Current, 12; Edmonton, 9, 11, 14; Hamilton, Bermuda, 17, 24.

Auroras were reported from Father Point, 9, 12; White River, 6; Minnedosa, 6; Swift Current, 5, 9, 10; Edmonton, 10, 13, 25; Prince Albert, 1, 3.

DESCRIPTION OF TABLES AND CHARTS.

By Mr. WM. B. STOCKMAN, Chief, Division of Meteorological Records.

For description of tables and charts see page 136 of REVIEW for March, 1904.